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COST IN U.S. DOLLARS

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TOTAL

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STRUCTURE FILE UPDATES: 24 MAR 2000 HIGHEST RN 259886-75-4

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 13, 1999

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=> s viagra/cn

L1 1 VIAGRA/CN

=> s sildenafil?/cn

L2 2 SILDENAFIL?/CN

=> file medline, hcaplus, uspatfull

COST IN U.S. DOLLARS

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FILE 'MEDLINE' ENTERED AT 14:40:46 ON 26 MAR 2000

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FILE 'USPATFULL' ENTERED AT 14:40:46 ON 26 MAR 2000 CA INDEXING COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

=> s 11 or 12

L3 445 L1 OR L2

=> s ed or eerecti? or impoten?

L4 228938 ED OR EERECTI? OR IMPOTEN?

=> s ed or erecti? or impoten?

L5 246668 ED OR ERECTI? OR IMPOTEN?

=> s spine or spinal or paraly?

L6 267236 SPINE OR SPINAL OR PARALY?

=> s 13 and 15

L7 345 L3 AND L5

=> s 17 and 16

L8 16 L7 AND L6

=> dup rem 18

PROCESSING COMPLETED FOR L8
L9
12 DUP REM L8 (4 DUPLICATES REMOVED)

=> d bib, ab, kwic 19 1-12

```
L9
     ANSWER 1 OF 12 USPATFULL
ΑN
       2000:31420 USPATFULL
       Local administration of phosphodiesterase inhibitors for the treatment
TI
       of erectile dysfunction
IN
       Doherty, Jr., Paul C., Cupertino, CA, United States
       Place, Virgil A., Kawaihae, HI, United States
       Smith, William L., Mahwah, NJ, United States
       Vivus, Inc., Mountain View, CA, United States (U.S. corporation)
PA
PI
       US 6037346 20000314
ΑI
       US 1998-181070 19981027 (9)
       Continuation-in-part of Ser. No. US 1997-958816, filed on 28 Oct 1997,
RLI
       now abandoned
DT
       Utility
EXNAM
       Primary Examiner: Reamer, James H.
       Reed, Dianne E.Reed & Associates
LREP
CLMN
       Number of Claims: 94
ECL
       Exemplary Claim: 1,23
DRWN
       1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 1331
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AΒ
       A method is provided for treating erectile dysfunction in a
       mammalian male individual. The method involves the local administration
       of a phosphodiesterase inhibitor or a pharmaceutically acceptable salt,
       ester, amide or derivative thereof within the context of an effective
       dosing regimen. A preferred mode of administration is transurethral.
       Pharmaceutical formulations and kits are provided as well.
       Local administration of phosphodiesterase inhibitors for the treatment
TI
       of erectile dysfunction
AB
       A method is provided for treating erectile dysfunction in a
       mammalian male individual. The method involves the local administration
       of a phosphodiesterase inhibitor or a pharmaceutically acceptable.
SUMM
       This invention relates generally to methods and pharmaceutical
       compositions for treating erectile dysfunction; more
       particularly, the invention relates to local administration of
       phosphodiesterase inhibitors to treat erectile dysfunction.
       Impotence is the consistent inability to achieve or sustain an
SUMM
     erection of sufficient rigidity for sexual intercourse. It has
       recently been estimated that approximately 10 million American men are
     impotent (R. Shabsigh et al., "Evaluation of Erectile
Impotence," Urology 32:83-90 (1988); W. L. Furlow, "Prevalence
       of Impotence in the United States, " Med Aspects Hum. Sex.
       19:13-6 (1985)). Impotence is recognized to be an
       age-dependent disorder, with an incidence of 1.9 percent at 40 years of
       age and 25. . .
                          Male; A. C. Kinsey et al., eds., Philadelphia, Pa.:
       W. B. Saunders, 218-262 (1948)). In 1985 in the United States,
     impotence accounted for more than several hundred thousand
       outpatient visits to physicians Rational Center for Health Statistics,
       National Hospital Discharge Survey,.
SUMM
       A number of causes of impotence have been identified,
       including vasculogenic, neurogenic, endocrinologic and psychogenic.
       Vasculogenic impotence, which is caused by alterations in the
       flow of blood to and from the penis, is thought to be the most frequent
       organic cause of impotence. Common risk factors for
       vasculogenic impotence include hypertension, diabetes,
       cigarette smoking, pelvic trauma, and the like. Neurogenic
     impotence is associated with spinal-cord injury,
      multiple sclerosis, peripheral neuropathy caused by diabetes or
       alcoholism and severance of the autonomic nerve supply to the penis
       consequent to prostate surgery. Erectile dysfunction is also
       associated with disturbances in endocrine function resulting in low
       circulating testosterone levels and elevated prolactin levels.
       Impotence can also be a side effect of various classes of
SUMM
       drugs, in particular, those that interfere with central neuroendocrine
```

```
control. . . or local neurovascular control of penile smooth muscle.
       Krane et al., New England Journal of Medicine 321: 1648 (1989). Penile
     erection requires (1) dilation of the arteries that regulate
       blood flow to the lacunae of the corpora cavernosum, (2) relaxation of.
SUMM
            . vasoactive substances such as vasoactive intestinal
polypeptide
       (VIP), prostanoids, endothelin and nitric oxide. High sympathetic tone
       (noradrenergic) is implicated in erectile dysfunction, and, in
       some patients, the disorder can be successfully treated with
       noradrenergic receptor antagonists. See, e.g., Krane et al.,.
SUMM
       There is also evidence that dopaminergic mechanisms are involved in
     erectile function. For example, pharmacologic agents that
       elevate the level of brain dopamine or stimulate brain dopamine
       receptors increase sexual activity.
       . . . Hyppa et al., Acta Neurologic Scand. 46:223 (Supp. 43, 1970)).
SUMM
       Specific dopamine agonists have been studied for their effects on
     erectile function. Apomorphine, (n-propyl) norapo-morphine,
       bromocryptine, amantidine, fenfluramine, L-DOPA and various other
       pharmacological activators of central dopaminergic receptors have been
       found to increase episodes of penile erection in male rats
       (Benassi-Benelli et al., Arch. int. Pharmacodyn. 242:241 (1979); Poggioli et al., Riv. di Farm. & Terap. 9:213. . .
SUMM
       The currently available dopamine agonists, with few exceptions, have
       found limited use in the treatment of erectile dysfunction
       because of their peripheral side effects. These effects include nausea
       and vomiting, postural hypotension, arrhythmias, tachycardia,
dysphoria,
       psychosis, hallucinations, drowsiness and dysidnesias (See, e.g.,
       Martindale The Extra Pharmacopoeia, 31st Ed., pages
       1151-1168).
SUMM
       Other pharmaceutical methods for treating erectile dysfunction
       have also proved to be problematic. For example, with Viagra.RTM., the
       most recently introduced oral drug therapy, not only.
SUMM
       . . herein provides a means to avoid the above-mentioned problems
       encountered with the systemic administration of pharmacologically
active
       agents to treat erectile dysfunction. Specifically, the
       invention relates to methods and formulations for effectively treating
     erectile dysfunction by locally administering a selected active
       agent, wherein the active agent is an inhibitor of a phosphodiesterase.
       . . messenger nucleotides, cyclic adenosine monophosphate (cAMP),
SUMM
       and cyclic guanosine monophosphate (cGMP) (see, e.g., Doherty, "Oral,
       Transdermal, and Transurethral Therapies for Erectile
       Dysfunction" in Male Infertility and Dysfunction, Hellstrom, ed
       ., Chapter 34 (New York, N.Y.: Springer-VerlagHellstrom, 1997)).
      Numerous phosphodiesterase inhibitors have previously been described in
       the literature for a variety. . . 34). Oral and parenteral
       administration of phosphodiesterase inhibitors, as alluded to above,
      have also been suggested for the treatment of erectile
      dysfunction (Doherty, supra; see also PCT Publication Nos. WO 96/16644,
      and WO 94/28902). The phosphodiesterases have been classified into
      The following documents are of interest insofar as they relate to the
SUMM
       treatment of erectile dysfunction by delivering
      pharmacologically active agents locally to the penis:
         . . injection of vasodilator drugs into the corpora cavernosa of
SUMM
       the penis to dilate the arteries that supply blood to the
    erectile tissues, thereby inducing an erection;
       . . direct injection of a drug into the corpora cavernosa, by
SUMM
      topical drug administration or transurethral drug administration, for
      inhibiting penile erection due to priapism and for treating
      urinary incontinence;
SUMM
```

. . . the intracavernosal injection of papaverine (a smooth muscle relaxant), phenoxybenzamine or phentolamine (.alpha.-receptor blockers)

```
and a phentolamine-papaverine mixture to treat erectile
        dysfunction; and
 SUMM
                et al., and U.S. Pat. Nos. 5,242,391, 5,474,535, 5,686,093 and
        5,773,020 to Place et al. relate to the treatment of erectile
       dysfunction by delivery of a vasoactive agent into the male urethra.
 SUMM
       The invention, as noted above, is directed to local administration of
       pharmacologically active agents to treat erectile dysfunction.
       The agents are preferably, although not necessarily, Type V
       phosphodiesterase inhibitors. Surprisingly, it has now been found by
 the
       inventors herein that local administration of these phosphodiesterase
       inhibitors as disclosed herein is highly effective in treating
     erectile dysfunction, particularly vasculogenic
     impotence. Local administration of phosphodiesterase inhibitors,
       and transurethral drug administration in particular, generally enables
       use of a lower drug dosage, avoids. . . administered medications an
       individual may be taking. The local administration of phosphodiesterase
       inhibitors, particularly Type V phosphodiesterase inhibitors, to treat
     erectile dysfunction, accordingly represents an important
       advance in the treatment of impotence and other
     erectile disorders.
SUMM
        . . . primary object of the invention to address the above-described
       need in the art by providing a novel method for treating
     erectile dysfunction by locally administering an effective
       amount of a selected phosphodiesterase inhibitor to an individual in
       need of such therapy.
       In a first aspect of the invention, a method is provided for treating
SUMM
an
       individual prone to erectile dysfunction, particularly
       vasculogenic erectile dysfunction, the method comprising
       locally administering to the individual a pharmaceutical formulation
       containing a phosphodiesterase inhibitor. Administration of the
       pharmaceutical. . . carried out within the context of a
predetermined
       dosing regimen such that the agent is effective in the treatment of
     erectile dysfunction. The method is especially useful in the
       treatment of vasculogenic impotence, although other types of
     erectile dysfunction may also be treated using the present
       formulations. Drug delivery is preferably effected transurethrally, but
       the drug may also.
       In another aspect of the invention, a pharmaceutical formulation is
SUMM
       provided for carrying out the present method for treating
     erectile dysfunction. The pharmaceutical formulation comprises
       an effective amount of a phosphodiesterase inhibitor, a carrier or
       vehicle preferably suitable for the.
SUMM
       . . . formulation during storage and prior to use; and instructions
       for carrying out drug administration in a manner effective to treat
     erectile dysfunction.
DETD
       The term "erectile dysfunction" is intended to include any and
       all types of erectile dysfunction, including: vasculogenic,
       neurogenic, endocrinologic and psychogenic impotence ("
     impotence" is used here in its broadest sense to indicate an
       inability a periodic or consistent inability to achieve or sustain an
     erection of sufficient rigidity for sexual intercourse; see U.S.
       Pat. No. 5,242,391 to Place et al., cited supra); Peyronie's syndrome;
       priapism;.
       . . of the occurrence of symptoms and/or their underlying cause,
DETD
       and improvement or remediaton of damage. The present method of
       "treating" erectile dysfunction, as the term is used herein,
       thus encompasses both prevention of the disorder in a predisposed
       individual and treatment.
DETD
               is meant a nontoxic but sufficient amount of the drug or agent
      to provide the desired effect, i.e., treatment of erectile
      dysfunction.
DETD
      Active Agents for Treatment of Erectile Dysfunction:
```

DETD . . . to carry out the method of the invention, a selected phosphodiesterase inhibitor is locally administered to an individual prone to erectile dysfunction.

DETD . . . art of synthetic organic chemistry and described, for example, by J. March, Advanced Organic Chemistry; Reactions, Mechanisms and Structure, 4th Ed. (New York: Wiley-Interscience, 1992). For example, acid addition salts are prepared from the free base using conventional methodology, and involves. . .

DETD The active agent is administered locally to treat erectile dysfunction, and is accordingly administered in a pharmaceutical formulation suitable for local administration.

DETD . . . as described in the pertinent literature and pharmaceutical texts. See, for example, Remington: The Science and Practice of Pharmacy, 19th Ed. (Easton, Pa.: Mack Publishing Co., 1995), which discloses typical methods of preparing pharmaceutical

compositions

CLM

in the form of urethral suppositories..

DETD . . . control device such as that described in PCT Publication No. WO

97/47260, entitled "Venous Flow Control Element for Maintaining Penile Erection." Preferred devices are formed from a length of flexible tubing having an integral fastening means, so as to provide for. . . it effectively enhances retention of blood within the penis without substantially obstructing arterial inflow or becoming too constrictive during the erectile process. Use of the VFC device also enables enhanced effectiveness of local drug therapy, in that the active agent is retained within the penis, allowing movement into the corpus cavernosa. This produces smooth muscle response and a consistent erectile response. In this embodiment, a kit will include the venous flow control device in addition to the components noted above, . . .

 ${\tt DETD}$   $\;\;$  The pharmaceutical preparations of Examples 1 and 2 can be used to treat

erectile dysfunction in individuals in which the dysfunction is associated, for example, vascular insufficiency. Dosage may be adjusted using the methodology. . . Example 3. In all instances the individuals are expected to respond positively, although variations in the intensity and duration of erection may be observed depending on dose, formulation and environment. Generally, between approximately 20 and 90 minutes following drug administration, it is expected that an erection may be achieved.

DETD In this experiment, zaprinast, a Type V phosphodiesterase inhibitor, was

evaluated for its capability to induce **erections** in the anesthetized male cat. Adult male cats (3.5 to 5.0 kg) were initially sedated with ketamine and then anesthetized. . . mm, respectively). These results suggest that a selective Type V phosphodiesterase inhibitor, when administered locally, can induce significant increases in **erectile** response in a mammalian male. The same or greater effects are expected upon administration of a urethral suppository. What is claimed is:

 A method for treating erectile dysfunction in a male individual, comprising locally administering to the individual an effective amount of a pharmaceutical composition consisting essentially.

- 13. The method of claim 1, wherein the **erectile** dysfunction is vasculogenic **impotence**.
- 18. A pharmaceutical formulation for treating **erectile** dysfunction in an individual, comprising a urethral dosage form of a phosphodiesterase inhibitor, a carrier suitable for transurethral drug administration, . . .
- 20. A pharmaceutical formulation for treating **erectile** dysfunction in an individual comprising a sterile liquid composition

```
suitable for intracavernosal administration containing a
therapeutically
       effective amount of a. .
       21. A pharmaceutical formulation for treating erectile
       dysfunction in an individual, comprising a topical or transdermal
       composition containing a therapeutically effective amount of a
       phosphodiesterase inhibitor and.
       23. A kit for treating erectile dysfunction in an individual,
       comprising: a urethral dosage form of a Type V, cGMP-specific
       phosphodiesterase inhibitor or a pharmaceutically acceptable.
for
       using the drug delivery means to administer the drug within the context
       of a dosing regimen effective to treat erectile dysfunction.
       86. A method for treating erectile dysfunction in a male
       individual, comprising administering to the individual a pharmaceutical
       composition comprising a therapeutically effective amount of: (a).
IT
      58-32-2, Dipyridamole
                               69-89-6D, Xanthine, derivs.
                                                             120-73-0D, Purine,
                253-82-7D, Quinazoline, derivs. 289-95-2D, Pyrimidine, 37762-06-4, Zaprinast 51022-77-6, Etazolate 51022-77
      derivs.
      derivs.
                                                                  51022-77-6D,
      Etazolate, esters and analogs 56739-21-0, Nitraquazone
                                                                   56739-21-0D,
      Nitraquazone, esters and analogs 57076-71-8, Denbufylline
61413-54-5,
      Rolipram
                 61413-54-5D, Rolipram, esters and analogs
                                                               66327-51-3,
      Furazlocillin
                      79030-08-3D, Griseolic acid, derivs.
                                                               120223-30-5,
                 120223-30-5D, EMD54622, esters and analogs
      EMD54622
                                                               136145-07-8,
                  136145-07-8D, LAS-31025, esters and analogs
      LAS-31025
                                                                  139145-27-0
    139755-83-2, Sildenafil
                              147676-63-9
                                            150452-19-0
                                                           167298-74-0
      184147-55-5
                    190281-17-5D, Pyrazolopyrimidinone, derivs.
                                                                    224157-99-7
        (phosphodiesterase inhibitor local administration for treatment of
        erectile dysfunction)
L9
     ANSWER 2 OF 12 MEDLINE
     1999334975
AΝ
                    MEDLINE
DN
     99334975
TТ
     Erectile dysfunction in spina bifida is treatable [letter].
     Palmer J S; Kaplan W E; Firlit C F
ΑU
     LANCET, (1999 Jul 10) 354 (9173) 125-6.
SO
     Journal code: LOS. ISSN: 0140-6736.
CY
     ENGLAND: United Kingdom
DT
     (CLINICAL TRIAL)
     Letter
     (RANDOMIZED CONTROLLED TRIAL)
     English
LA
FS
     Abridged Index Medicus Journals; Priority Journals; Cancer Journals
EM
     199910
     19991001
EW
     We undertook a prospective, blinded, randomised, placebo-controlled, dose
AB
     escalation, crossover study that showed that erectile
     dysfunction in spina bifida is medically treatable, specifically with
     sildenafil citrate.
TI
     Erectile dysfunction in spina bifida is treatable [letter].
AB
     We undertook a prospective, blinded, randomised, placebo-controlled, dose
     escalation, crossover study that showed that erectile
     dysfunction in spina bifida is medically treatable, specifically with
     sildenafil citrate.
CT
     Check Tags: Human; Support, Non-U.S. Gov't
      Adult
      Analysis of Variance
      Cross-Over Studies
     *Impotence: DT, drug therapy
      Impotence: ET, etiology
     *Phosphodiesterase Inhibitors: TU, therapeutic use
```

\*Piperazines: TU, therapeutic use

```
Single-Blind Method
     *Spinal Dysraphism: CO, complications
RN
     139755-83-2 (sildenafil)
L9
     ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2000 ACS
     1999:690785 HCAPLUS
AN
DN
     131:281606
ΤI
     Method of treating impotence due to spinal cord injury
     with sildenafil or other cGMP phosphodiesterase inhibitor
IN
     Maytom, Murray Craig; Osterloh, Ian Howard
     Pfizer Ltd., UK; Pfizer Research and Development Company, N.V./S.A.
PA
SO
     Eur. Pat. Appl., 7 pp.
     CODEN: EPXXDW
DT
     Patent
LA
     English
FAN. CNT 1
     PATENT NO.
                                    APPLICATION NO. DATE
                KIND DATE
     EP 951908 A2 19991027 EP 1999-301085 19990215
PΙ
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     JP 11315025 A2 19991116
                                          JP 1999-43205
                                                           19990222
                           19990909
     AU 9918390
                      A1
                                        AU 1999-18390
                                                           19990223
PRAI US 1998-75580
                    19980223
OS
     MARPAT 131:281606
     A class of cGMP phosphodiesterase inhibitors, including sildenafil and
AB
     pharmaceutically acceptable salts thereof, is disclosed for use in the
     treatment of sexual dysfunction in male and female animals, esp. humans,
     with a spinal cord injury. The invention can be used to treat
     sexual dysfunction in male animals that exhibit essentially no residual
     penile function.
     Method of treating impotence due to spinal cord injury
TI
     with sildenafil or other cGMP phosphodiesterase inhibitor
     . . thereof, is disclosed for use in the treatment of sexual
     dysfunction in male and female animals, esp. humans, with a spinal
     cord injury. The invention can be used to treat sexual dysfunction in
     male animals that exhibit essentially no residual penile.
     cGMP phosphodiesterase inhibitor sexual dysfunction; sildenafil sexual
ST
     dysfunction spinal cord injury; erectile dysfunction
     spinal cord injury sildenafil
ΙT
     Sexual behavior
        (disorder; sildenafil or other cGMP phosphodiesterase inhibitor for
        treatment of sexual dysfunction in animal with spinal cord
       injury)
IT
     Sexual behavior
        (impotence; sildenafil or other cGMP phosphodiesterase
       inhibitor for treatment of sexual dysfunction in animal with
     spinal cord injury)
IT
     Spinal cord
        (injury; sildenafil or other cGMP phosphodiesterase inhibitor for
       treatment of sexual dysfunction in animal with spinal cord
       injury)
IT
    9068-52-4, CGMP phosphodiesterase
    RL: BSU (Biological study, unclassified); BIOL (Biological study)
        (inhibitors; sildenafil or other cGMP phosphodiesterase inhibitor for
       treatment of sexual dysfunction in animal with spinal cord
       injury)
IT
    139755-83-2 171599-83-0, Sildenafil citrate
    RL: BAC (Biological activity or effector, except adverse); THU
     (Therapeutic use); BIOL (Biological study); USES (Uses)
        (sildenafil or other cGMP phosphodiesterase inhibitor for treatment of
       sexual dysfunction in animal with spinal cord injury)
```

```
DN
     99325995
ΤI
     Sildenafil: a review of its use in erectile dysfunction.
ΑU
     Langtry H D; Markham A
CS
     Adis International Limited, Mairangi Bay, Auckland, New Zealand.
SO
     DRUGS, (1999 Jun) 57 (6) 967-89. Ref: 80
     Journal code: EC2. ISSN: 0012-6667.
CY
     New Zealand
DT
     Journal; Article; (JOURNAL ARTICLE)
     General Review; (REVIEW)
     (REVIEW, ACADEMIC)
LA
     English
FS
    Priority Journals
EM
    199911
EW
    19991102
AB
    Sildenafil is an oral therapy for erectile dysfunction of a
    broad range of causes. By selectively inhibiting phosphodiesterase type
5,
    it allows corpus cavernosum smooth muscle to relax, potentiating
    erections during sexual stimulation. Blood pressure is reduced
```

transiently by sildenafil, but more marked hypotension may occur during concurrent administration of sildenafil and organic nitrates; this combination is contraindicated. Sildenafil is rapidly absorbed, with dose-proportional peak plasma concentrations within 1 hour of administration. The elimination half-life is 3 to 5 hours. Dosages usually

begin at 50mg taken when needed =1 hour before sexual activity no more than once daily. The maximum dose is 100mg when needed once daily and lower doses (e.g. 25mg) may be used in elderly patients and those with hepatic or renal impairment or receiving cytochrome P450 enzyme CYP3A4 inhibitors, such as ritonavir, saquinavir, ketoconazole, erythromycin or cimetidine. More than 3000 patients with erectile dysfunction of organic (e.g. diabetes or spinal cord injury), psychogenic or mixed origin received sildenafil 5 to 100mg or placebo in fixed- or titrated-dose trials. Sildenafil was associated with dose-related improvements in the frequency, hardness and duration of erections and in patients' abilities to achieve and maintain erections adequate for successful sexual intercourse. In titrated-dose trials, the most commonly effective doses were 50 or 100mg, although lower doses were effective in some patients. Sildenafil was significantly more effective than placebo in erectile dysfunction of all tested causes. The efficacy of sildenafil was not affected by patient age (> or < or =65 years) or by antihypertensive or antidepressant medications. The drug was effective in patients with severe erectile dysfunction. Efficacy was maintained in long term (1-year) studies. Sildenafil also appears to improve the quality of life of both patients and their sexual partners. Common adverse events associated with sildenafil were transient and mild or moderate and included headache, flushing, dyspepsia, nasal congestion and abnormal vision. Tolerability was maintained in long term (< or =1  $\,$ year) studies. No serious sildenafil-related adverse events occurred in clinical trials; cardiovascular events seen in postmarketing surveillance generally occurred in patients with other known risk factors.

## CONCLUSIONS:

Sildenafil is an effective oral treatment in men with erectile dysfunction. It was significantly superior to placebo in improving erections and allowing successful penetrative sexual intercourse. Although its place in disease management is still emerging and there are contraindications to its use, if preliminary positive reports are confirmed, sildenafil will be the pre-eminent first-line therapy for erectile dysfunction.

Sildenafil: a review of its use in erectile dysfunction. TΤ

AB Sildenafil is an oral therapy for erectile dysfunction of a broad range of causes. By selectively inhibiting phosphodiesterase type 5,

it allows corpus cavernosum smooth muscle to relax, potentiating erections during sexual stimulation. Blood pressure is reduced

transiently by sildenafil, but more marked hypotension may occur during concurrent administration of. . . or receiving cytochrome P450 enzyme CYP3A4 inhibitors, such as ritonavir, saquinavir, ketoconazole, erythromycin or cimetidine. More than 3000 patients with erectile dysfunction of organic (e.g. diabetes or spinal cord injury), psychogenic or mixed origin received sildenafil 5 to 100mg or placebo in fixed- or titrated-dose trials. Sildenafil was associated with dose-related improvements in the frequency, hardness and duration of erections and in patients' abilities to achieve and maintain erections adequate for successful sexual intercourse. In titrated-dose trials, the most commonly effective doses were 50 or 100mg, although lower doses were effective in some patients. Sildenafil was significantly more effective than placebo in erectile dysfunction of all tested causes. The efficacy of sildenafil was not affected by patient age (> or < or =65 years) or by antihypertensive or antidepressant medications. The drug was effective in patients with erectile dysfunction. Efficacy was maintained in long term (1-year) studies. Sildenafil also appears to improve the quality of life of both. . . surveillance generally occurred in patients with other

known risk factors. CONCLUSIONS: Sildenafil is an effective oral treatment

in men with erectile dysfunction. It was significantly superior to placebo in improving erections and allowing successful penetrative sexual intercourse. Although its place in disease management is still emerging and there are contraindications to its use, if preliminary positive reports are confirmed, sildenafil will be the pre-eminent first-line therapy for erectile dysfunction.

Check Tags: Human; Male

Clinical Trials

Drug Interactions

\*Impotence: DT, drug therapy

Phosphodiesterase Inhibitors: AE, adverse effects Phosphodiesterase Inhibitors: PD, pharmacology \*Phosphodiesterase Inhibitors: TU, therapeutic use \*Piperazines: TU, therapeutic.

RN 139755-83-2 (sildenafil)

L9 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2000 ACS

ΑN 2000:15560 HCAPLUS

DN 132:59075

TI Sildenafil citrate to treat erectile dysfunction in the spina bifida male

AU Palmer, Jeffrey S.; Kaplan, William E.; Firlit, Casimir F.

Division of Urology, Children's Memorial Medical Center, Northwestern CS University Medical School, Chicago, IL, USA

SO Surg. Forum (1999), 50, 712-713 CODEN: SUFOAX; ISSN: 0071-8041

PB American College of Surgeons

DΤ Journal

LΑ English

Sildenafil citrate (25 or 50 mg) dose-dependently improved AB erectile function in men with spina bifida.

TI Sildenafil citrate to treat erectile dysfunction in the spina bifida male

Sildenafil citrate (25 or 50 mg) dose-dependently improved AB erectile function in men with spina bifida.

sildenafil erectile dysfunction spina bifida; impotence ST spina bifida sildenafil

ΙT Sexual behavior

> (impotence; sildenafil citrate treatment of erectile dysfunction in men with spina bifida)

IT Spinal column

> (spina bifida; sildenafil citrate treatment of erectile dysfunction in men with spina bifida)

```
ΙT
     171599-83-0, Sildenafil citrate
     RL: BAC (Biological activity or effector, except adverse); THU
     (Therapeutic use); BIOL (Biological study); USES (Uses)
        (sildenafil citrate treatment of erectile dysfunction in men
        with spina bifida)
L9
     ANSWER 6 OF 12 MEDLINE
AN
     1999163632
                    MEDLINE
DN
     99163632
ΤI
     A two-part pilot study of sildenafil (VIAGRA) in men with erectile
     dysfunction caused by spinal cord injury.
     Maytom M C; Derry F A; Dinsmore W W; Glass C A; Smith M D; Orr M;
Osterloh
     I H
CS
     Pfizer Central Research, Sandwich, UK.
so
     SPINAL CORD, (1999 Feb) 37 (2) 110-6.
     Journal code: CKK. ISSN: 1362-4393.
CY
     ENGLAND: United Kingdom
DT
     (CLINICAL TRIAL)
     Journal; Article; (JOURNAL ARTICLE)
     (MULTICENTER STUDY)
     (RANDOMIZED CONTROLLED TRIAL)
LA
     English
FS
     Priority Journals
EM
     199907
EW
     19990702
AB
     STUDY DESIGN: This was a two-part pilot study in men with erectile
     dysfunction (ED) due to spinal cord injury (SCI: cord
     level range T6-L5). Part I was a randomised, double-blind, two-way
     cross-over study comparing a single dose of sildenafil 50 mg or placebo.
     Part II was a randomised, double-blind, parallel-group evaluation of
     sildenafil 50 mg or placebo, taken as required (not more than once daily)
     approximately 1 h prior to sexual activity, over a period of 28 days.
     OBJECTIVES: To assay the efficacy and safety of sildenafil 50 mg and
     placebo. SETTING: Clinic- and home-based assessments in the United
     Kingdom. METHODS: A total of 27 subjects who were able to achieve at
     a grade 2 erection (hard, but not hard enough for penetration)
     in response to penile vibratory stimulation (PVS) were recruited. In Part
     I, the reflexogenic response of the penis to PVS was evaluated in the
     clinic while in Part II, the response to treatment was assessed in the
     home (global efficacy. questionniare, diary). RESULTS: In Part I, 17/26
     (65%) subjects had erections of >60% rigidity at the penile base
     (median duration 3.5 min) after sildenafil compared with 2/26 (8%)
     duration 0 min) alter placebo (P=0.0003). In Part II, 9/12 (75%) subjects
     on sildenafil and 1/14 (7%) subjects on placebo reported that the
     treatment had improved their erections (P<0.005), and 8/12 (67%)
     and 2/13 (15%) men, respectively, indicated that they wished to continue
     treatment (P<0.02). An analysis of diary data showed no difference
     the groups with respect to the mean number of erections hard
     enough for penetration (P = 0.08). The mean proportion of attempts at
     sexual intercourse that were successful was 30 and 15%, respectively
     (P=0.21). Similarly, responses to the end-of-treatment questionnaire
     indicated that there were no significant differences between the groups
```

with respect to the frequency of erections hard enough for sexual intercourse (P=0.47) or that lasted as long as the subject would have liked (P=0.11). No subject discontinued sildenafil due to adverse events. CONCLUSION: Sildenafil is an effective, well-tolerated oral treatment for ED in SCI subjects.

- A two-part pilot study of sildenafil (VIAGRA) in men with erectile TТ dysfunction caused by spinal cord injury.
- STUDY DESIGN: This was a two-part pilot study in men with erectile AB dysfunction (ED) due to spinal cord injury (SCI: cord

level range T6-L5). Part I was a randomised, double-blind, two-way cross-over study comparing a single dose. . . in the United Kingdom. METHODS: A total of 27 subjects who were able to achieve at least a grade 2 erection (hard, but not hard enough for penetration) in response to penile vibratory stimulation (PVS) were recruited. In Part I, . . response to treatment was assessed in the home (global the. efficacy. questionniare, diary). RESULTS: In Part I, 17/26 (65%) subjects had erections of >60% rigidity at the penile base (median duration 3.5 min) after sildenafil compared with 2/26 (8%) (median duration 0. . Part II, 9/12 (75%) subjects on sildenafil and 1/14 (7%) subjects on placebo reported that the treatment had improved their erections (P<0.005), and 8/12 (67%) and 2/13 (15%) men, respectively, indicated that they wished to continue treatment (P<0.02). An analysis of diary data showed no difference between the groups with respect to the mean number of erections hard enough for penetration (P = 0.08). The mean proportion of attempts at sexual intercourse that were successful was 30. . . to the end-of-treatment questionnaire indicated that there were no significant differences between the groups with respect to the frequency of erections hard enough for sexual intercourse (P=0.47) or that lasted as long as the subject would have liked (P=0.11). No subject discontinued sildenafil due to adverse events. CONCLUSION: Sildenafil is an effective, well-tolerated oral treatment for ED in SCI subjects. Check Tags: Human; Male; Support, Non-U.S. Gov't Adult Cross-Over Studies Double-Blind Method \*Impotence: DT, drug therapy \*Impotence: ET, etiology Middle Age Phosphodiesterase Inhibitors: AE, adverse effects \*Phosphodiesterase Inhibitors: TU, therapeutic use Pilot Projects Piperazines: AE, adverse effects \*Piperazines: TU, therapeutic use \*Spinal Cord Injuries: CO, complications Treatment Outcome 139755-83-2 (sildenafil) ANSWER 7 OF 12 MEDLINE DUPLICATE 2 2000128503 MEDLINE 20128503 Sildenafil citrate (VIAGRA): a novel oral treatment for erectile dysfunction caused by traumatic spinal cord injury. Giuliano F; Hultling C; el Masry W S; Luchner E; Stien R; Maytom M C; Orr M; Smith M D; Osterloh I H Hopital de Bicetre, Paris, France. INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. SUPPLEMENT, (1999 Jun) 102 24-6. Journal code: CW2. ISSN: 1368-504X. ENGLAND: United Kingdom (CLINICAL TRIAL) Journal; Article; (JOURNAL ARTICLE) (RANDOMIZED CONTROLLED TRIAL) English 200004 20000404 Sildenafil citrate (VIAGRA): a novel oral treatment for erectile dysfunction caused by traumatic spinal cord injury. Check Tags: Human; Male Administration, Oral Adult Cross-Over Studies

RN

1.9

ΑN

DN

ΤI

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CS

SO

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EM

EW

TI

CT

Double-Blind Method

```
*Impotence: DT, drug therapy
      Impotence: ET, etiology
      Middle Age
     *Phosphodiesterase Inhibitors: AD, administration & dosage
     *Piperazines: AD, administration & dosage
      Spinal Cord Injuries: CO, complications
RN
     139755-83-2 (sildenafil)
     ANSWER 8 OF 12 MEDLINE
L9
     2000128500
                   MEDLINE
AN
DN
     20128500
ΤI
     Partners' perceptions of the efficacy of sildenafil citrate (VIAGRA) in
     the treatment of erectile dysfunction.
     Hultling C
ΔIJ
CS
     Spinalis SCI Research Unit, Karolinska Institute, Stockholm, Sweden.
     INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. SUPPLEMENT, (1999 Jun) 102
SO
     Journal code: CW2. ISSN: 1368-504X.
     ENGLAND: United Kingdom
CY
DΤ
     (CLINICAL TRIAL)
     Journal; Article; (JOURNAL ARTICLE)
     (RANDOMIZED CONTROLLED TRIAL)
I.A
     English
EM
     200004
EW
     20000404
TI
     Partners' perceptions of the efficacy of sildenafil citrate (VIAGRA) in
     the treatment of erectile dysfunction.
CT
     Check Tags: Female; Human; Male
      Adult
      Aged
      Aged, 80 and over
      Cross-Over Studies
      Double-Blind Method
     *Impotence: DT, drug therapy
      Impotence: ET, etiology
     Middle Age
     *Penile Erection
      Perception
     *Phosphodiesterase Inhibitors: AD, administration & dosage
     *Piperazines: AD, administration & dosage
     *Sexual Partners
      Spinal Cord Injuries: CO, complications
RN
     139755-83-2 (sildenafil)
1.9
    ANSWER 9 OF 12 MEDLINE
                                                         DUPLICATE 3
ΑN
    1999328203
                    MEDLINE
DN
     99328203
     Randomized trial of sildenafil for the treatment of erectile
ТΤ
    dysfunction in spinal cord injury. Sildenafil Study Group.
     Giuliano F; Hultling C; El Masry W S; Smith M D; Osterloh I H; Orr M;
ΑU
    Mavtom M
     Service d'Urologie, AP-HP, CHU de Bicetre, Le Kremlin Bicetre, France.
CS
    ANNALS OF NEUROLOGY, (1999 Jul) 46 (1) 15-21.
     Journal code: 6AE. ISSN: 0364-5134.
CY
    United States
DT
     (CLINICAL TRIAL)
    Journal; Article; (JOURNAL ARTICLE)
     (RANDOMIZED CONTROLLED TRIAL)
LA
    English
FS
    Priority Journals
EM
    199910
EW
    19991001
AB
    Erectile dysfunction is a common complication of spinal
    cord injury. This double-blind, placebo-controlled, two-way crossover
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study assessed the efficacy and safety of oral sildenafil in men with

erectile dysfunction caused by traumatic spinal cord injury. A total of 178 men (mean age, 38 years) received placebo or sildenafil 1 hour before sexual activity for 6 weeks; after a 2-week washout period, the men received the alternate treatment for 6 weeks. The 50-mg starting dose could be adjusted to 100 or 25 mg based on efficacy and tolerability. Efficacy was assessed by using global efficacy questions, the International Index of Erectile Function (IIEF), and a patient log of erectile activity. Of 143 men with residual erectile function at baseline, 111 (78%) reported improved erections and preferred sildenafil to placebo. For all men (including those who reported no residual erectile function at baseline), 127 of 168 (76%) reported improved erections and preferred sildenafil to placebo. For all men, 132 of 166 (80%) reported that sildenafil improved sexual intercourse compared with 17 of 166 men (10%) reporting improvement with placebo. IIEF questions assessing the ability to achieve and maintain erections and satisfaction with sexual intercourse demonstrated significant improvement with sildenafil. Sildenafil was well tolerated, with a low rate of discontinuation because of treatment-related adverse events (2% vs 1% for placebo). Oral sildenafil is an effective and well-tolerated treatment for erectile dysfunction caused by spinal cord injury. Randomized trial of sildenafil for the treatment of erectile dysfunction in spinal cord injury. Sildenafil Study Group. Erectile dysfunction is a common complication of spinal cord injury. This double-blind, placebo-controlled, two-way crossover study assessed the efficacy and safety of oral sildenafil in men with erectile dysfunction caused by traumatic spinal cord injury. A total of 178 men (mean age, 38 years) received placebo or sildenafil 1 hour before sexual activity. . . or 25 mg based on efficacy and tolerability. Efficacy was assessed by using global efficacy questions, the International Index of Erectile Function (IIEF), and a patient log of erectile activity. Of 143 men with residual erectile function at baseline, 111 (78%) reported improved erections and preferred sildenafil to placebo. For all men (including those who reported no residual erectile function at baseline), 127 of 168 (76%) reported improved erections and preferred sildenafil to placebo. For all men, 132 of 166 (80%) reported that sildenafil improved sexual intercourse compared with 17 of 166 men (10%) reporting improvement with placebo. IIEF questions assessing the ability to achieve and maintain erections and satisfaction with sexual intercourse demonstrated significant improvement with sildenafil. Sildenafil was well tolerated, with a low rate of discontinuation because of treatment-related adverse events (2% vs 1% for placebo). Oral sildenafil is an effective and well-tolerated treatment for erectile dysfunction caused by spinal cord injury. Check Tags: Human; Male; Support, Non-U.S. Gov't Administration, Oral Cross-Over Studies Double-Blind Method \*Impotence: DT, drug therapy Impotence: ET, etiology Phosphodiesterase Inhibitors: AD, administration & dosage Phosphodiesterase Inhibitors: AE, adverse effects \*Phosphodiesterase Inhibitors: TU, therapeutic use Piperazines: AD, administration & dosage Piperazines: AE, adverse effects \*Piperazines: TU, therapeutic use \*Spinal Cord Injuries: CO, complications 139755-83-2 (sildenafil) ANSWER 10 OF 12 MEDLINE DUPLICATE 4 1999071156 MEDLINE 99071156 Efficacy and safety of oral sildenafil (Viagra) in men with

erectile dysfunction caused by spinal cord injury.

CT

RN

L9

AN

DN

ΤI

```
ΑU
     Derry F A; Dinsmore W W; Fraser M; Gardner B P; Glass C A; Maytom M C;
     Smith M D
CS
     National Spinal Injury Centre, Stoke Mandeville, UK.
     NEUROLOGY, (1998 Dec) 51 (6) 1629-33.
     Journal code: NZO. ISSN: 0028-3878.
CY
     United States
DT
     (CLINICAL TRIAL)
     Journal; Article; (JOURNAL ARTICLE)
     (RANDOMIZED CONTROLLED TRIAL)
LΑ
     English
     Abridged Index Medicus Journals; Priority Journals
FS
EΜ
     199903
EW
     19990301
AB
     OBJECTIVE: To evaluate the efficacy and safety of 50-mg doses of
     sildenafil during a 28-day period in patients with erectile
     dysfunction caused by spinal cord injury (cord level range, T6
     through L5). BACKGROUND: Sildenafil is an orally active, potent, and
     selective inhibitor of phosphodiesterase type 5, an important regulator
of
     cyclic guanosine monophosphate in the human corpus cavernosum. METHODS:
To
     be included in this double-blind, placebo-controlled study, all patients
     had to be able to achieve at least a partial reflexogenic erectile
     response to penile vibratory stimulation. The study utilized a single
     triangular sequential trial design. A total of 27 patients were
randomized
     to receive 50 mg of sildenafil or placebo, taken orally as required (not
     more than once daily) approximately 1 hour before sexual activity.
     RESULTS: After 28 days of treatment, nine of 12 patients (75%) on
     sildenafil and one of 14 patients (7%) on placebo reported that treatment
     had improved their erections (p=0.0043). Furthermore, eight of
     12 patients (67%) on sildenafil and two of 13 patients (15%) on placebo
     indicated that they wished to continue treatment (p=0.018). A significant
     improvement in satisfaction with their sex life was reported by patients
     taking sildenafil (p=0.012). No patients discontinued treatment due to
     adverse events. CONCLUSION: Oral sildenafil, taken as required (not more
     than once daily), significantly improves the quality of erections
     and satisfaction with sex life in men with erectile dysfunction
     caused by a spinal cord injury between T6 and L5.
ТT
     Efficacy and safety of oral sildenafil (Viagra) in men with
     erectile dysfunction caused by spinal cord injury.
AΒ
     OBJECTIVE: To evaluate the efficacy and safety of 50-mg doses of
     sildenafil during a 28-day period in patients with erectile
     dysfunction caused by spinal cord injury (cord level range, T6
     through L5). BACKGROUND: Sildenafil is an orally active, potent, and
     selective inhibitor of phosphodiesterase. . . be included in this
     double-blind, placebo-controlled study, all patients had to be able to
     achieve at least a partial reflexogenic erectile response to
     penile vibratory stimulation. The study utilized a single triangular
     sequential trial design. A total of 27 patients were.
     patients (75%) on sildenafil and one of 14 patients (7%) on placebo
     reported that treatment had improved their erections (p=0.0043).
     Furthermore, eight of 12 patients (67%) on sildenafil and two of 13
     patients (15%) on placebo indicated that they. . . due to adverse
     events. CONCLUSION: Oral sildenafil, taken as required (not more than
once
     daily), significantly improves the quality of erections and
     satisfaction with sex life in men with erectile dysfunction
     caused by a spinal cord injury between T6 and L5.
CT
     Check Tags: Human; Male; Support, Non-U.S. Gov't
     Administration, Oral
     Adult
     Double-Blind Method
     *Enzyme Inhibitors: AE, adverse effects
```

\*Impotence: DT, drug therapy

```
*Impotence: ET, etiology
      Middle Age
     *Piperazines: AE, adverse effects
      Reflex: DE, drug effects
      Sexuality
     *Spinal Cord Injuries: CO, complications
RN
     139755-83-2 (sildenafil)
L9
     ANSWER 11 OF 12 MEDLINE
AN
     1999024309
                    MEDLINE
DN
     99024309
TI
     Oral sildenafil (Viagra) on trial.
ΑU
     van der Linde I
     SOUTH AFRICAN MEDICAL JOURNAL, (1998 Oct) 88 (10) 1290.
SO
     Journal code: U4R. ISSN: 0038-2469.
CY
     South Africa
DT
     Journal; Article; (JOURNAL ARTICLE)
LA
     English
FS
     Priority Journals
EM
     199903
EW
     19990303
CT
     Check Tags: Female; Human; Male
     *Enzyme Inhibitors: TU, therapeutic use
     Follow-Up Studies
     *Impotence: DT, drug therapy
     *Piperazines: TU, therapeutic use
      Spinal Cord Injuries: CO, complications
RN
     139755-83-2 (sildenafil)
     ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2000 ACS
L9
     1999:68946 HCAPLUS
AN
     130:231768
DN
ΤI
     Pharmacotherapy of male erectile dysfunction with sildenafil
AU
     Kulkarni, S. K.; Reddy, D. S.
CS
     University Institute of Pharmaceutical Sciences, Panjab University,
     Chandigarh, 160 014, India
     Indian J. Pharmacol. (1998), 30(6), 367-378
     CODEN: INJPD2; ISSN: 0253-7613
PB
     Indian Pharmacological Society
DT
     Journal; General Review
LA
     English
     A review with 55 refs. Male erectile dysfunction (MED) is a
AB
     common sexual disorder influenced by psychol., org., phys., endocrine and
     neurovascular factors. Parasympathetic stimulation activates cholinergic
     receptors resulting in increased prodn. of nitric oxide and vasoactive
     peptides which increase the cGMP (cGMP) and thereby increasing vascular
     smooth muscle relaxation and vasodilation of corpus cavernosum.
     causes rigid penile erection sufficient for sexual intercourse.
     However, in erectile dysfunction, there is an inability to
     achieve or maintain a penile erection. One of the current
     approaches in therapies for MED includes elevating levels of cGMP using
     phosphodiesterase (PDE) inhibitors. Sildenafil is the first orally
     active, potent and competitive inhibitor of type-5 cGMP-specific PDE
     enzyme that has been recently approved for the treatment of MED.
     Sildenafil is a synthetic methylpiperazine deriv. that selectively
     inhibits PDE in human corpus cavernosum. Sildenafil has demonstrated its
     effectiveness in erectile dysfunction in several preclin. and
     clin. studies. It is well-tolerated (50-100 mg/day, p.o.) and safe agent
     for erectile dysfunction in patients with diabetes, traumatic
     spinal cord injury, psychol. causes and physiol. disorders.
     Adverse events reported include transient headache, dyspepsia, flushing,
     diarrhea and visual disturbance. The discovery of sildenafil has not
only
```

resulted in a huge market for drugs, but also unfolded the pathophysiol. of **erectile** dysfunction. However, more controlled clin. studies

```
, are needed to establish the safety of sildenafil in patients with
     different age groups.
TI
     Pharmacotherapy of male erectile dysfunction with sildenafil
     A review with 55 refs. Male erectile dysfunction (MED) is a
     common sexual disorder influenced by psychol., org., phys., endocrine and
     neurovascular factors. Parasympathetic stimulation activates
cholinergic.
          increase the cGMP (cGMP) and thereby increasing vascular smooth
     muscle relaxation and vasodilation of corpus cavernosum. This causes
     rigid penile erection sufficient for sexual intercourse.
     However, in erectile dysfunction, there is an inability to
     achieve or maintain a penile erection. One of the current
     approaches in therapies for MED includes elevating levels of cGMP using
     phosphodiesterase (PDE) inhibitors. Sildenafil is. . . Sildenafil is
     synthetic methylpiperazine deriv. that selectively inhibits PDE in human
     corpus cavernosum. Sildenafil has demonstrated its effectiveness in
     erectile dysfunction in several preclin. and clin. studies. It is
     well-tolerated (50-100 mg/day, p.o.) and safe agent for erectile
     dysfunction in patients with diabetes, traumatic spinal cord
     injury, psychol. causes and physiol. disorders. Adverse events reported
     include transient headache, dyspepsia, flushing, diarrhea and visual
     disturbance. The discovery of sildenafil has not only resulted in a huge
     market for drugs, but also unfolded the pathophysiol. of erectile
     dysfunction. However, more controlled clin. studies are needed to
     establish the safety of sildenafil in patients with different age groups.
     review sildenafil erectile dysfunction
ST
IT
     Impotence
        (sildenafil treatment erectile dysfunction in men)
     139755-83-2, Sildenafil
     RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or
     effector, except adverse); THU (Therapeutic use); BIOL (Biological
study);
     USES (Uses)
        (sildenafil treatment erectile dysfunction in men)
IT
     9068-52-4, CGMP Phosphodiesterase
     RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
        (sildenafil treatment erectile dysfunction in men)
=>
Executing the logoff script...
=> LOG H
COST IN U.S. DOLLARS
                                                 SINCE FILE
                                                                 TOTAL
                                                      ENTRY
                                                               SESSION
FULL ESTIMATED COST
                                                      14.65
                                                                 22.30
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
                                                 SINCE FILE
                                                                 TOTAL
                                                      ENTRY
                                                               SESSION
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SESSION WILL BE HELD FOR 60 MINUTES STN INTERNATIONAL SESSION SUSPENDED AT 14:43:36 ON 26 MAR 2000

-1.67

-1.67

CA SUBSCRIBER PRICE